

RESPONSE UNDER 37 C.F.R. § 1.116
U. S. Application No. 09/286,418

REMARKS

As a preliminary matter, the Examiner requested that Applicant send to the Examiner a copy of the reference JP 8-175404 from the IDS filed December 11, 2003. Applicant complied with this request by filing a copy of the reference on March 3, 2004 with a "Communication to Examiner."

Claims 1, 2, and 4-20 are all the claims pending in the application.

Based on the Response filed November 26, 2003, the Examiner repeated the previous claim rejection. Thus, the status of the claims is the following.

Claims 1, 2, 4, 5, 8-10, and 18-20 are rejected under 35 U.S.C. § 102(e) as being anticipated by previously-cited Kifuku et al. (US 5,740,040). Claims 6, 7, and 11-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims.

In the "Response to Arguments" on page 4 of the Office Action the Examiner argues that the last paragraph on page 17 of the Applicant's specification discloses that the angular velocity can be used to detect the static friction. The Examiner contends that static friction is force and thus the configuration disclosed on page 17 falls under the definition of a torque sensor. Further, the Examiner asserts that the Kifuku et al. reference discloses the same configuration. Applicant respectfully disagrees with the Examiner, as set forth below.

The paragraph on page 17 of Applicant's specification cited by the Examiner discloses that in an embodiment of Applicant's invention, the static friction of the steering system is estimated by extracting the edge of the angular velocity of the steering system. However, this

RESPONSE UNDER 37 C.F.R. § 1.116
U. S. Application No. 09/286,418

disclosure is not what is claimed in claim 1 of the present invention. Rather, claim 1 recites a means of computing an estimated value of static friction of the steering system **based on the steering force of a driver**. Thus, even if Kifuku et al. discloses that the static friction of the steering system is estimated by extracting the edge of the angular velocity of the steering system, to anticipate claim 1, Kifuku et al. must also disclose a means of computing an estimated value of static friction of the steering system **based on the steering force of a driver**. Kifuku et al. does not make such a disclosure.

Furthermore, as previously described in the Response filed November 26, 2003, in an exemplary embodiment of the present invention shown in FIG. 3, the motor angular velocity is not concerned with the static friction compensation current computing means 10. That is, the static friction compensation current computing means 10 is independent from the motor angular velocity computation means 2 and the motor angular acceleration computation means 3, and thus independent from the motor angular velocity itself.

The Examiner cites col. 20, lines 35-40 of the reference as allegedly disclosing the claimed means of computing an estimated value of static friction of the steering system based on the steering force of a driver. However, the cited portion of the reference actually discloses the following:

In the present invention, the static friction cannot be completely compensated because no means for detecting the steering angle is provided, but if static- friction compensating current is arranged to be calculated depending on the differential value of the motor angular velocity estimate ω , the effect of static friction can be alleviated.

FIG. 31 is a block diagram representation of static friction compensation in this embodiment.

RESPONSE UNDER 37 C.F.R. § 1.116
U. S. Application No. 09/286,418

Clearly, this excerpt does not disclose a means of computing an estimated value of static friction of the steering system based on the steering force of a driver. Instead, as described in the excerpt and shown in FIG. 31, the motor angular velocity estimate ω is used to calculate static-friction compensating current.


Therefore, claim 1 is believed to be allowable over the prior art for at least these reasons.

Also, claims 2, 4, 5, 8-10, and 18-20 are believed to be in form for allowance, at least because of their dependence from claim 1.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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